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ABSTRACT

This document defines information literacy (i.e., the ability to access, evaluate, organize, and use information from a variety of sources) and outlines reasons to be concerned about information literacy. It then summarizes the implications of information literacy for teaching, learning, schools, libraries and librarians, the workplace, and society and culture. (Contains 25 references.) (AEF)

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Understanding

by Barbara Humes

e are an information society. At least 27 percent of our homes in the United States have computers (NCES 1997). Sixty-five percent of our public schools have access to the Internet (NCES 1997) and over 70 percent of our public libraries do too (Bertot, J.C. et al.1997). By the year 2000 we aim to have a computer in every classroom and every library so that students and citizens of all ages can have access to the information highway. We hear experts speak of technology-supported learning, school reform through technology, and global telecommunications. And we worry about access to technology, developing the skills to use the technology, and the costs of that technology.

We are outfitting our schools, libraries, and homes with electronic technologies—but are we preparing our students and teachers for the onslaught of information that is provided by these technologies? What happens when the student can get more information from the Internet than previously conveyed by a teacher or a textbook? What should a student do when faced with so many informational possibilities? Which of the information is credible and which is not?

With the provision of so much more information, and therefore more misinformation, everyone—whether they are in the education system or not—must have not only reading skills and computer skills but information skills, too.

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What Is Information Literacy?

The term *information literacy*, sometimes referred to as information competency, is generally defined as the ability to access, evaluate, organize, and use information from a variety of sources. Being information literate requires knowing how to clearly define a subject or area of investigation; select the appropriate terminology that expresses the concept or subject under investigation; formulate a search strategy that takes into consideration different sources of information and the variable ways that information is organized; analyze the data collected for value, relevancy, quality, and suitability; and subsequently turn information into knowledge (ALA 1989). This involves a deeper understanding of how and where to find information, the ability to judge whether that information is meaningful, and ultimately, how best that information can be incorporated to address the problem or issue at hand.

Information literacy is *not* the same as computer literacy (which requires a technological know-how to manipulate computer hardware and software) or library literacy (which requires the ability to use a library's collection and its services), although there is a strong relationship among all these concepts. Each of these literacies requires some level of critical thinking. But compared with computer literacy, information literacy goes beyond merely having access to and knowledge of how to use the technology—because technology alone does not guarantee quality learning experiences. And compared with library literacy, information literacy is more than searching through an online catalog or other reference materials because information literacy is not a technique, but a goal for learners (Gilton 1994).

Information literacy requires an awareness of the way in which information systems work, of the dynamic link between a particular information need and the sources and channels required to satisfy that need (Darch et al. 1997).

Why Should We Be Concerned About Information Literacy?

The need to evaluate the credibility of information is nothing new, but until recently most learners could expect to deal with some carefully selected collections of reference materials in academic and public libraries, as well as a fairly limited range of widely accepted authoritative texts in the classroom or in the home library.

However, since anyone can make a Web page, for example, how can you tell if the information is reliable or not? A critical point about using the Internet is that individuals posting information aren't required to pass through traditional editorial constraints or undergo any kind of fact-checking required in conventional published print media (Literacy Update 1997).

The reluctance to look for information from tried and true sources such as well-indexed books or the temptation to assign value to information simply because it came off of the computer will likely provide results with poor quality.

Not only must we be discerning learners but, in addition, we must be constantly learning. As the pace of global change has increased, so has our need for learning. Consider the tremendous changes in both the amount and variety of information resources, as well as great changes in technology that affects our lives in everything from banking to medical care. Change requires us to know more and learn more about the world around us. Yet several scholars such as Breivik and Jones (1993) have found that the traditional literacies of reading, writing, and mathematical reasoning are insufficient for lifelong learning. The increasing quantity of information from all sources and the pressure to remain in a constant state of conscious learning means that we must be dexterous in the use of information, too. The need to handle and use information is present in all stages of life and the acquisition of the competencies of information literacy must be intertwined with the acquisition of the other literacies (Darch et al. 1997).

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Implications for Teaching

Because becoming information literate is an active process, requiring the seeking out of knowledge from multiple sources rather than passively receiving and repeating back facts, the teacher's role must evolve from the giver of knowledge into being more of a coach or guide (Wisconsin Educational Media Association 1993). Teachers, professors, teaching assistants, librarians, administrators, and the community must collaborate to develop ways to involve the students not only in using classroom materials but also in using resources from the broader community and the mass media.

Teachers must be prepared to "teach students to become critical thinkers, intellectually curious observers, creators, and users of information" (Lenox 1993). The goal is to prepare students early on to "learn how to learn" and carry these skills into other areas of their lives so that they can be independent seekers and consumers of information throughout their lives. Teachers of all subjects must blend their traditional fact-based approach with an emphasis on learner-based inquiry and the scientific inquiry process (Lenox 1993). This means shifting some of the responsibility of gaining knowledge from the teacher to the student and allowing students to develop questions, strategies to search for answers, and formulate conclusions. It also means having fewer lectures and replacing them with applied strategies for information literacy (Commission on Higher Education 1995).

Concurrently, educators and researchers must grapple with defining the standards and competencies associated with information literacy, develop effective new ways to engage learners and measure the outcome and impact of such learning. Efforts along these lines are being conducted by the Colorado Educational Media Association (1994), the American Association of School Librarians and the Association for Educational Communications and Technology (1996), the Bellingham Public Schools (1996), the Big Six Skills (Eisenberg and Berkowitz 1990), and Indiana University of Pennsylvania (Slaughter and Knupp 1994).

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Implications for Learning

Some of our learning occurs in formal settings where what we learn is packaged and prepared for us. But much learning also occurs in nonformal settings, and, informally as well. Information literacy is crucial in all three types of learning situations.

Becoming information literate will involve a drastic change from the way many students are accustomed to learning. First of all, it requires students to be more self-directed in their learning. This kind of independent, active learning prepares students for real-life problem solving (Breivik and Gee 1989). Also, in becoming information literate, students will assume more responsibility for their own learning either individually or in work groups. As students become more competent with their use of information resource options, they become aware of their individual styles of learning and preferred ways of assimilating knowledge (Bleakley and Carrigan 1994).

One successful method for developing information literacy skills is through resource-based learning which involves having students assume more responsibility for locating the very materials from which to learn. This approach develops lifelong learning skills because students are learning from the same sources which they will come to use in their daily lives such as books, newspapers, televisions, databases, government documents, subject matter experts, and others (ALA 1989). Moreover, resource-based learning provides an added advantage (i.e., it allows students to choose materials that match their academic levels and preferred learning styles thus individualizing the learning process for the individual student).

Implications for Schools

In order to produce learners who are information literate, schools will need to integrate information literacy skills across the curriculum in all subject areas beginning in the earliest grades. Educational institutions that wish to produce lifelong learners should be engaged in some fairly basic rethinking of how teaching faculty and information specialists such as librarians and media specialists can work together toward this end (Brittingham 1994). For example, the principal, as instructional leader, fosters resource-based learning by providing adequate planning time and budget support. As instructional partners, the classroom teacher and library media specialist are actively involved in identifying the learning needs of the students, developing teaching units that facilitate activities which offer meaningful practice in using a variety of information resources, and guiding student progress. (Wisconsin Educational Media Association 1993).

Based on a recent study, the following factors seemed to result in successful integration of information skills into the academic curriculum:

- the institution has a strong commitment to excellent educational outcomes for the students in the areas of critical thinking, problem solving, and information skills,
- library administrators have long-term commitments to integrate library instruction into the curriculum, and
- faculty and librarians work together in curriculum development (Rader 1995).

Replacing discrete curricular areas with problem-based learning inevitably involves reordering instructional roles and relationships as well as restructuring assessment strategies (Bleakley and Carrigan 1994).

Implications for Libraries and Librarians

Librarians led the way in the early 1970s in conceptualizing the idea of information literacy and its relationship to lifelong learning. Early development of the concept of information literacy frequently focused on the future role of libraries and librarians in helping with the use and application of information (Beherens 1994).

The impact of moving from text-based learning to resource-based learning will involve heavier use of library materials and a demand for more and varied media resources, including print and nonprint. Consequently, school administrators will need to re-evaluate how funds are distributed between the textbook budget and the budget for their library media resources. Public libraries will have to coordinate more closely with schools and other learning sites to ensure sufficient access to information resources and technology for all ages and abilities and to remain a strong community resource for lifelong learning.

As information specialists, librarians will be called upon more frequently to consult with teachers and learners, and to provide training and guidance toward the sharpening of information literacy skills not only in school and academic libraries but in public and special libraries as well.

These are important considerations for all types of libraries given the range of patrons who use these libraries and given that the linking of library holdings and the stepped up demand for resource sharing among libraries escalates the importance (and costs) of interlibrary loans.

Implications for the Workplace

Many changes are occurring in the workplace today. Employees are expected to keep up with rapid technological advances, to streamline operations and to possess the ability to be proactive problem solvers (Hancock 1993). Information literacy skills, which carry over from educational to occupational settings, are the keys to helping employees keep up with change in their jobs and careers, and in self-improvement and upgrading of skills. The U.S. Department of Labor's report from the Secretary's Commission on Achieving Necessary Skills (SCANS) lists information literacy as one of the five essential competencies necessary for solid job performance.

Awareness of market trends, the business climate, and policies affecting business involves the active pursuit of information upon which decisions will be made. Such information has to be considered for its recency, bias, source, and accuracy. Failure to understand this on the part of schools and business will result in students who are unprepared for the real world of work; and, given the current economic problems of our country and concerns about America's international competitiveness, the costliness of information illiteracy is ill-afforded nationally and individually (Breivik 1992).

Implications for Society and Culture

"How our country deals with the realities of the Information Age will have enormous impact on our democratic way of life and on our nation's ability to compete internationally" (ALA 1989). As a society, we are confronted with a huge number of decisions to make daily among candidates, issues, products, and other choices. Individuals' quality of life to a large extent depends upon the ability of citizens to be what Breivik and Gee (1989) call "discerning information consumers."

Indeed, information technology appears to be broadening the gap between the haves and the have nots. For example, minority and at-risk students, illiterate adults, people with English as a second language, and the economically disadvantaged are least likely to be able to access the kind of information that might lead to improvements in their lives (ALA 1987). Breivik and Gee caution that commercialization of information, control of information resources and new information technology could widen the gap between the haves and the have nots. This impending disparity can be headed off if access to information technology is provided *and* if competency with the information it provides is taught early in life.

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Endnotes

The challenges of the next century will be met by obtaining economic value from knowledge and by ensuring that our now and future workforce can contribute and perform. As foreseen many years ago by Peter Drucker (1969), "The most important thing [people] will have to learn is how to learn. The most important thing, in other words, is not specific skills, but a universal skill—that of using knowledge and its systematic acquisition as the foundation for performance, skill, and achievement."

The recent passage of the Telecommunications Act of 1996 heralded a new age of educational opportunity for our nation's school children, college students, and library users. The Act promotes universal serv e, particularly telecommunications services to underserved rural and urban areas. It opens up new avenues of information and makes information more accessible, perhaps thereby helping to increase and improve information literacy. The information superhighway has increased public interest in ways to empower people to access electronic networks and use information available through them. A lot of promises are being made about the boon to education offered by new information technology—but providing the complementary skills needed to convert opportunity to success must be the province of all educators.

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